

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for processing a block of transform coefficients, the block having rows and columns, the method comprising:

identifying zero patterns across rows in the block of transform coefficients to derive zero pattern information, wherein identifying zero patterns comprises determining the location of zero values or near zero values for multiple rows in the block of transform coefficients;

performing one-dimensional inverse transforms on a subset of the total number of rows in the block of transform coefficients by using zero pattern information; and

rescaling data to meet bandwidth constraints.

2. (Original) The method of claim 1, wherein the block of transform coefficients is an MPEG encoded block of 8x8 discrete cosine transform (DCT) coefficients.

3. (Previously Presented) The method of claim 1, further comprising setting a threshold for determining a near zero value in zero patterns.

4. Cancelled.

5. Cancelled.

6. (Previously Presented) The method of claim 1, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

7. Cancelled.

8. (Previously Presented) The method of claim 1, wherein the transcoding is performed on MPEG bitstreams.
9. (Original) The method of claim 1, wherein performing one-dimensional inverse transforms occurs during decoding.
10. (Original) The method of claim 9, wherein the decoding is performed on MPEG bitstreams.
11. (Currently Amended) An apparatus for processing on the rows and columns of a block of transform coefficients, the apparatus comprising:
 - memory; and
 - a processor coupled with the memory, the processor configured to a) identify zero pattern information across rows associated with the block of transform coefficients, wherein identifying the zero information comprises determining the location of zero values or near zero values for multiple rows in the block of transform coefficients; b) perform one-dimensional inverse transforms on a subset of rows of the block of transform coefficients using the zero pattern information; and c) rescale data to meet bandwidth constraints.
12. (Original) The apparatus of claim 11, wherein the block of transform coefficients is an MPEG encoded block of 8x8 DCT coefficients.
13. (Previously Presented) The apparatus of claim 11, wherein the processor is further configured to set a threshold for determining a near zero value in zero patterns.
14. Cancelled.

15. Cancelled.
16. (Previously Presented) The apparatus of claim 11, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.
17. Cancelled.
18. (Previously Presented) The apparatus of claim 11, wherein the rescaling is performed on MPEG bitstreams.
19. (Original) The apparatus of claim 11, wherein performing one-dimensional inverse transforms occurs during decoding.
20. (Original) The apparatus of claim 19, wherein the decoding is performed on MPEG bitstreams.
21. (Original) The apparatus of claim 11, wherein the memory and processor are associated with a cable modem headend line card.
22. Cancelled.
23. (Original) The apparatus of claim 11, wherein the memory and processor are associated with a transcoding system.
24. (Currently Amended) An apparatus for processing a block of transform coefficients, the block having rows and columns, the method comprising:

means for identifying zero patterns across rows in the block of transform coefficients to derive zero pattern information, wherein identifying zero patterns comprises determining the

location of zero values or near zero values for multiple rows in the block of transform coefficients;

means for performing one-dimensional inverse transforms on a subset of the total number of rows in the block of transform coefficients by using zero pattern information; and

means for rescaling data to meet bandwidth constraints.

25. (Original) The apparatus of claim 24, wherein the block of transform coefficients is an MPEG encoded block (8x8 DCT coefficients).

26. (Previously Presented) The apparatus of claim 24, further comprising setting a threshold for determining a near zero value in zero patterns.

27. Cancelled.

28. Cancelled.

29. (Previously Presented) The apparatus of claim 24, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

30. (Original) The apparatus of claim 24, wherein performing one-dimensional inverse transforms occurs during transcoding.

31. (Original) The apparatus of claim 30, wherein the transcoding is performed on MPEG bitstreams.

32. (Original) The apparatus of claim 24, wherein performing one-dimensional inverse transforms occurs during decoding.

33. (Original) The apparatus of claim 32, wherein the decoding is performed on MPEG bitstreams.

34. (Currently Amended) A computer readable medium comprising computer code for processing a block of transform coefficients, the block having rows and columns, the computer readable medium comprising:

computer code for setting a threshold for determining a near zero value in zero patterns;

computer code for identifying zero patterns across rows in the block of transform coefficients to derive zero pattern information, wherein identifying zero patterns comprises determining the location of zero values or near zero values for multiple rows and for multiple columns in the block of transform coefficients;

computer code for performing one-dimensional inverse transforms on a subset of the total number of rows and columns in the block of transform coefficients by using zero pattern information; and

computer code for rescaling data to meet bandwidth constraints.

35. (Original) The computer readable medium of claim 34, wherein the block of transform coefficients is an MPEG encoded block.

36. (Previously Presented) The computer readable medium of claim 34, further comprising setting a threshold for determining a near zero value in zero patterns.

37. Cancelled.

38. Cancelled.

39. (Previously Presented) The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms further comprises performing one-dimensional transforms on all the columns in the block of transform coefficients.

40. (Original) The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms occurs during transcoding.

41. (Original) The computer readable medium of claim 40, wherein the transcoding is performed on MPEG bitstreams.

42. (Original) The computer readable medium of claim 34, wherein performing one-dimensional inverse transforms occurs during decoding.

43. (Original) The computer readable medium of claim 42, wherein the decoding is performed on MPEG bitstreams.

44. (New) The method of claim 1, further comprising:

identifying zero patterns across columns in the block of transform coefficients to derive column zero pattern information, wherein identifying zero patterns across columns comprises determining the location of zero values or near zero values for multiple columns in the block of transform coefficients; and

performing one-dimensional inverse transforms on a subset of the total number of columns in the block of transform coefficients by using the column zero pattern information.

45. (New) The apparatus of claim 11, wherein the processor is further configured to:

d) identifying zero patterns across columns in the block of transform coefficients to derive column zero pattern information, wherein identifying zero patterns across columns

comprises determining the location of zero values or near zero values for multiple columns in the block of transform coefficients; and e) performing one-dimensional inverse transforms on a subset of the total number of columns in the block of transform coefficients by using the column zero pattern information.

46. (New) The apparatus of claim 24, further comprising:

means for identifying zero patterns across columns in the block of transform coefficients to derive column zero pattern information, wherein identifying zero patterns across columns comprises determining the location of zero values or near zero values for multiple columns in the block of transform coefficients; and

means for performing one-dimensional inverse transforms on a subset of the total number of columns in the block of transform coefficients by using the column zero pattern information.